

22nd Annual Public Meetings

***Proposed 2002 Rogue
Basin Project Operations***

May 22, 2002 – Grants Pass

May 23, 2002 – Gold Beach



US Army Corps
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Portland District

Meeting Overview

- *Introductions*
- *Project Purposes*
- *Water Management Plan Development*
- *New Analysis Approach – HEC-5*
- *Water Supply Forecast*
- *Proposed 2002 Operating Plan*
- *Public Comments/Questions*



Corps of Engineers Personnel Changes

- *Mike Posovich – Rogue Reservoir Regulator*
- *Richard Oldham – Reservoir Regulation Section Supervisor*
- *Bernard Klatte – Rogue Fisheries Biologist*



Congressionally Authorized Purposes

➤ Primary Purposes

- *Flood Control**
- *Fisheries
Enhancement**
- *Irrigation**
- *Water Supply*

➤ Secondary Purposes

- *Hydropower*
- *Water Quality**
- *Lake Recreation**

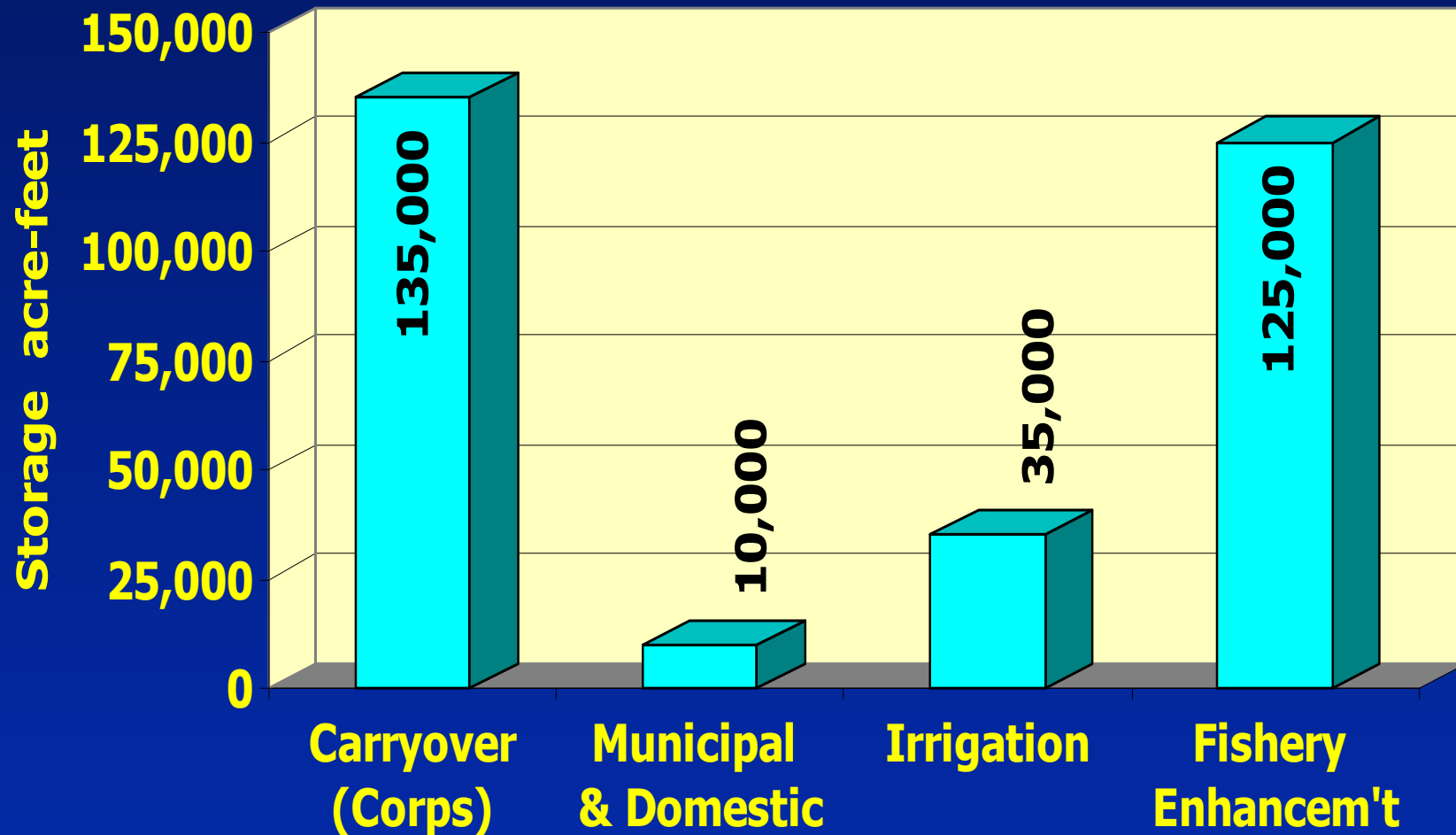
**** Applegate Authorized Purposes***



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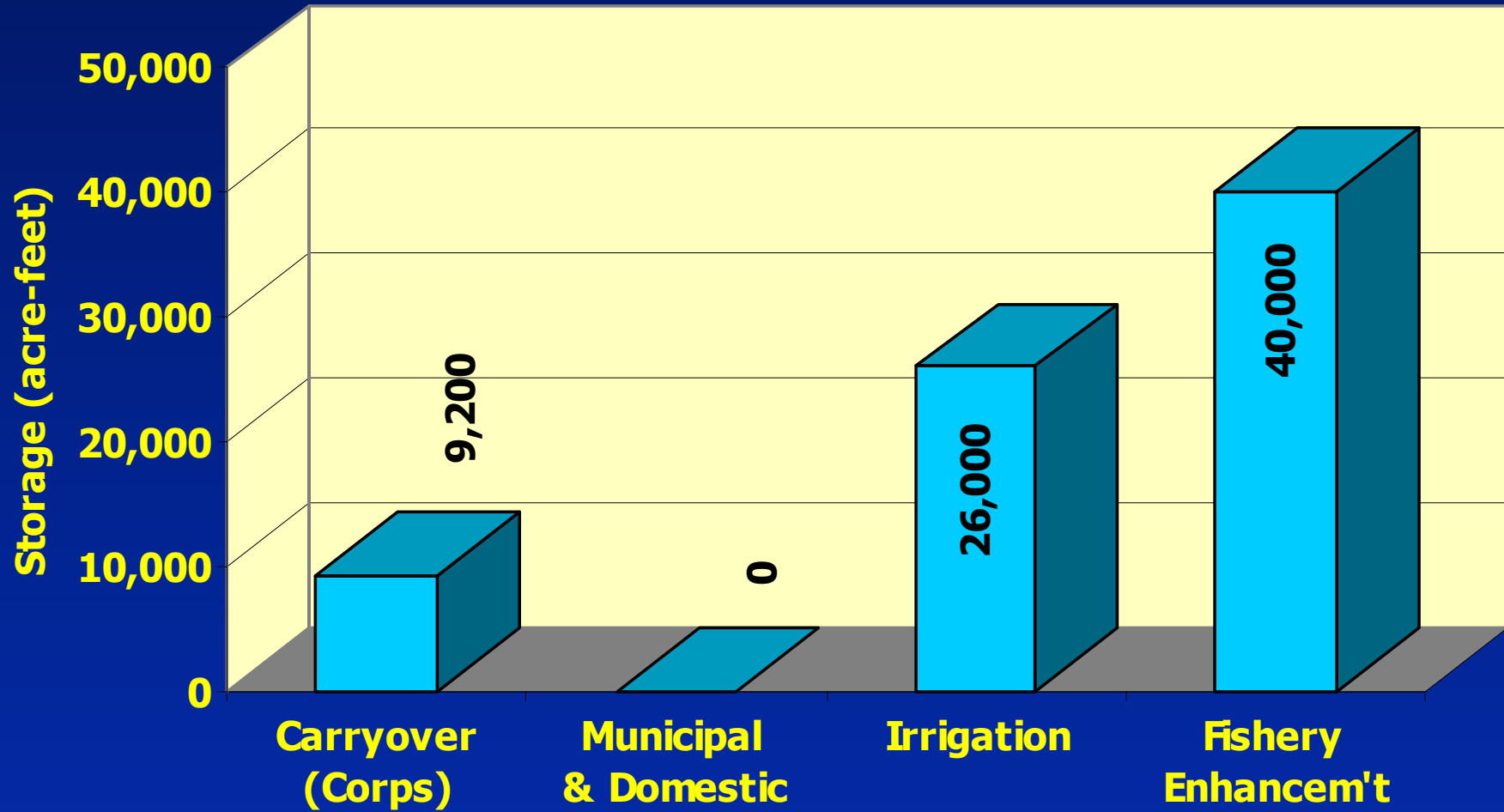
Lost Creek Reservoir

Seasonal Storage Allocations



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Applegate Reservoir Seasonal Storage Allocations



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US Army Corps of Engineers Portland District Water Management Team

District Engineer Col Randall Butler

Operations Div

Tom Savidge

Rogue River Basin Project

Manager-Jim Buck

(541) 878-2255

jim.a.buck@usace.army.mil

Operations-Steve Watkins

Operators: Marv Gentry, John Jones, Rodney Paulson, Bruce McClamroch, Don Sharp

Engineering & Constr Div

Howard Jones

H&H Branch-Ron Mason

ResReg Section-Richard Oldham

Regulator:

Mike Posovich

(503) 808-4869

michael.s.posovich@usace.army.mil

Planning, Programs, & PM Div

Davis Moriuchi

Env Res Branch-Bob Willis

Fishery Biologist:

Bernard Klatte



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Cooperative Hydro-Met Data Collection & Management

- *National Weather Service/Northwest River Forecast Center*
- *Natural Resources Conservation Service*
- *US Geological Survey*
- *US Army Corps of Engineers*
- *Oregon Department of Water Resources*
- *Oregon Department of Fish & Wildlife*



Rogue Basin Water Management Advisory Group

➤ Oregon Water Resources Dept.

*Regional Manager, Al Cook
Watermasters, Bruce Sund & Larry
Menteer*

• ODFW

*District Biologist, Mike Evenson
Tom Satterthwaite, Russ Stauff*

• OSMB

Wayne Shuyler

➤ US Natl Marine Fisheries Service

Frank Bird

➤ US Fish & Wildlife Service

Craig Tuss

➤ US Forest Service

Les Robertson, Jon McKelligott

➤ US Bur. of Land Management

David Maurer

➤ US Bur. of Reclamation

Ron Eggers



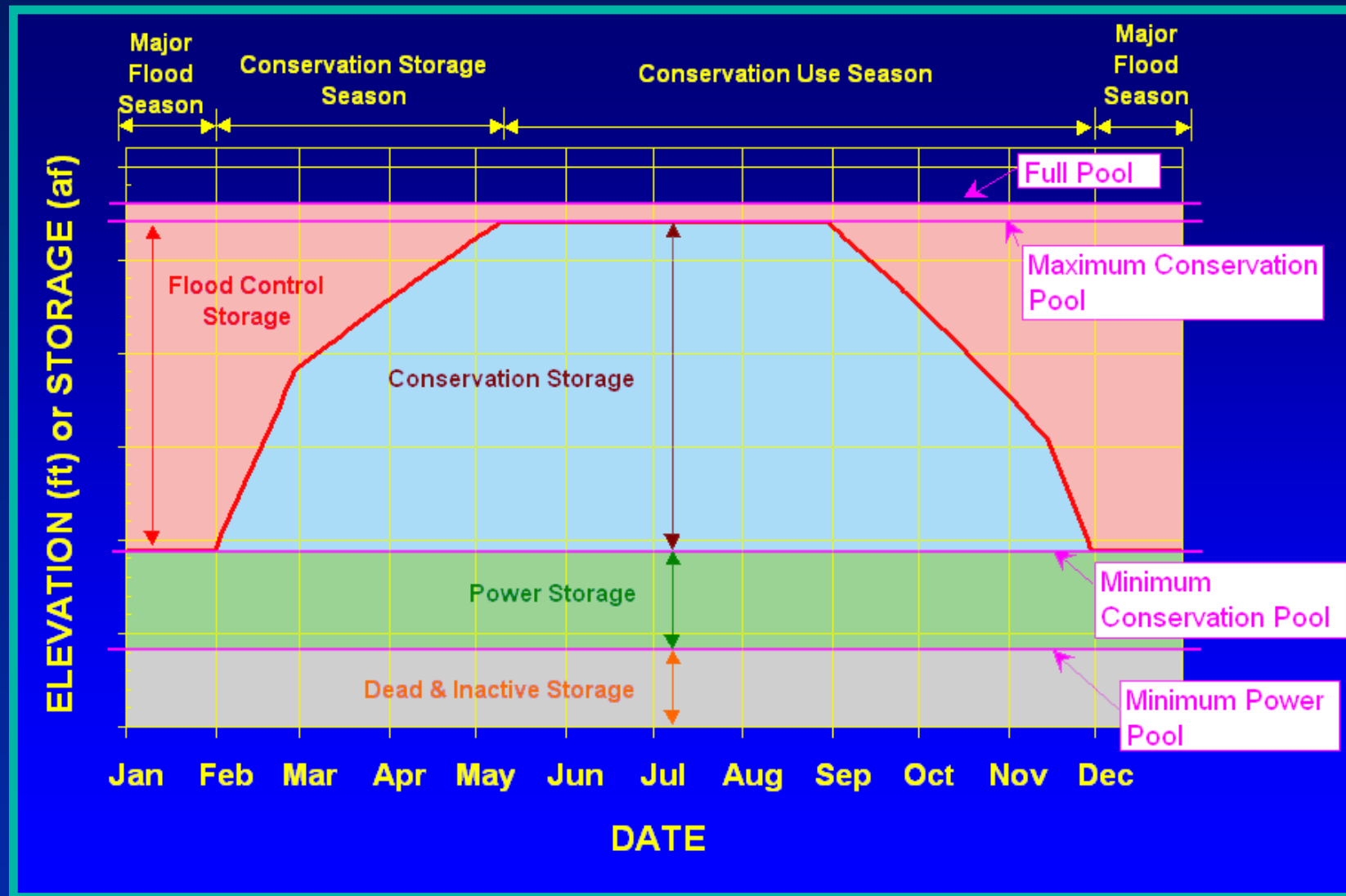
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Water Management Planning Process

- *FEBRUARY* week 3 *AG/Review & Outlook*
- *MARCH* week 3 *AG/Review & Outlook*
- *APRIL* week 3 *AG/Outlook & Pre-PLAN*
- *MAY* early *Draft PLAN*
- *MAY* week 3 *Public Meetings*
- *JUNE* early *Final PLAN*
- *MONTHLY* *Re-evaluate PLAN*



Water Control Diagram



New Forecasting Technique for Rogue Basin

- *Proven Tool Used in the Willamette Basin*
- *Accounts for Variability in Runoff Patterns*
- *Allows Improved Risk Management*



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Rogue Basin HEC-5 Model

- *Hydrologic Routing Model Developed by Corps of Engineers to Simulate System Operations*
- *Rogue Period of Record = 1929 – 2000 (72 Years)*
 - *Daily Reservoir Inflows*
 - *Daily Downstream Local Flows*
- *Able to Put in Downstream Flow Targets and Other System Constraints and Run the Period of Record*

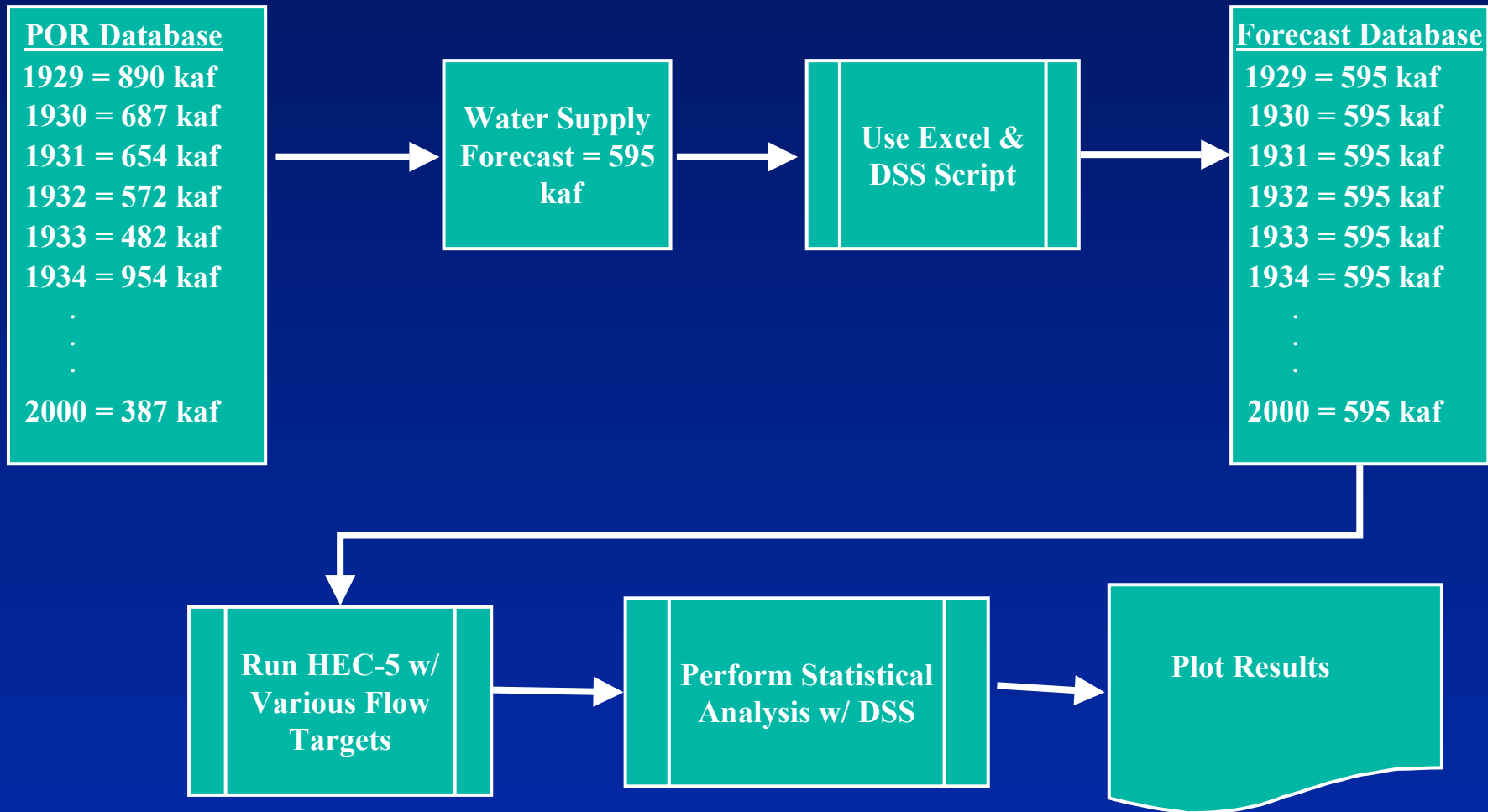


Forecasting with HEC-5

- *First Need to Change the Period of Record (POR) Database to Reflect Current Water Supply Forecast*
- *Accomplished Using Database Software to Change Large Amount of Daily Data*



Forecasting with HEC-5



DETROIT Lake Elevation April Forecast Summary Hydrograph



AS OF: 04/23/01



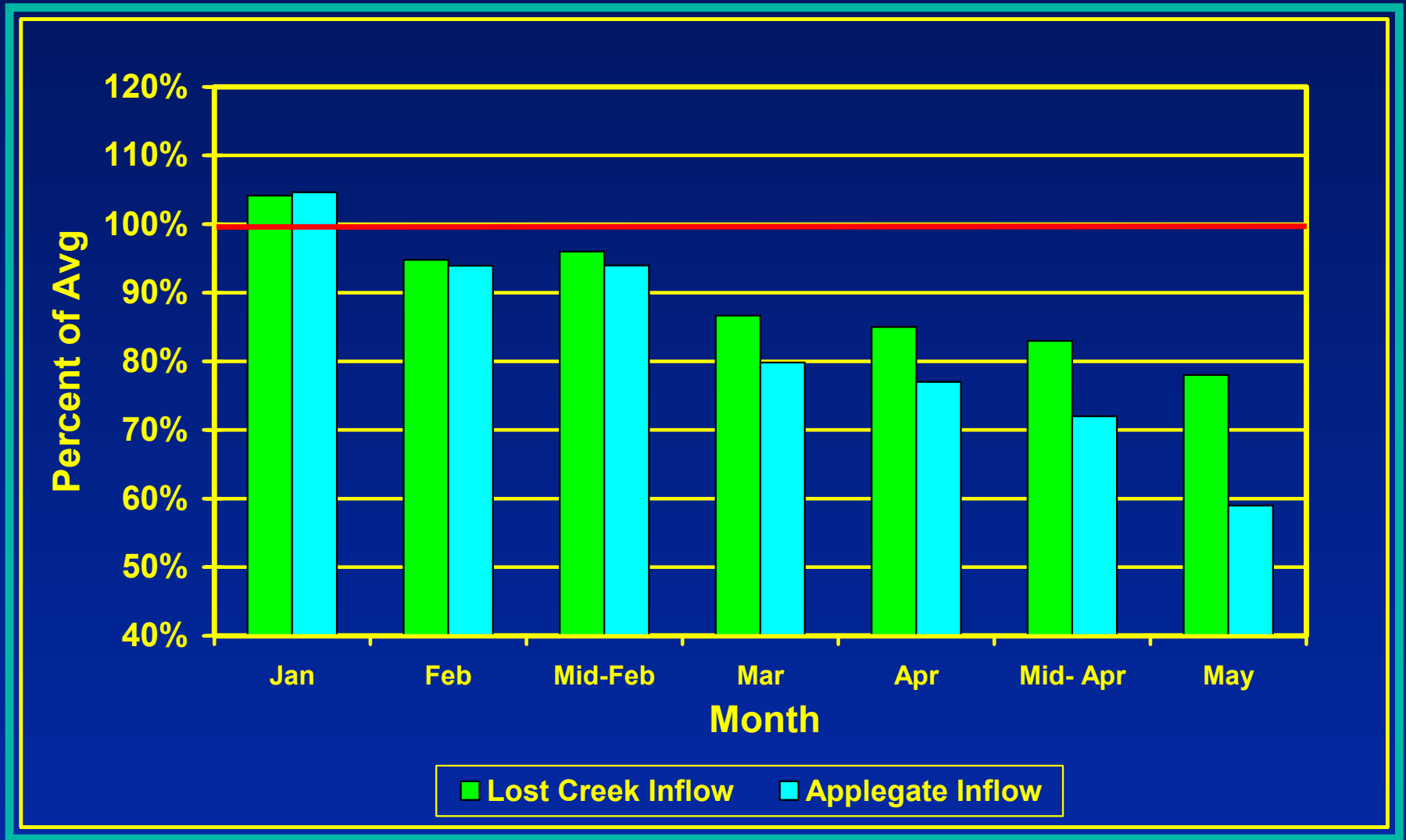
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Water Year 2002 Forecast & Proposed Operations



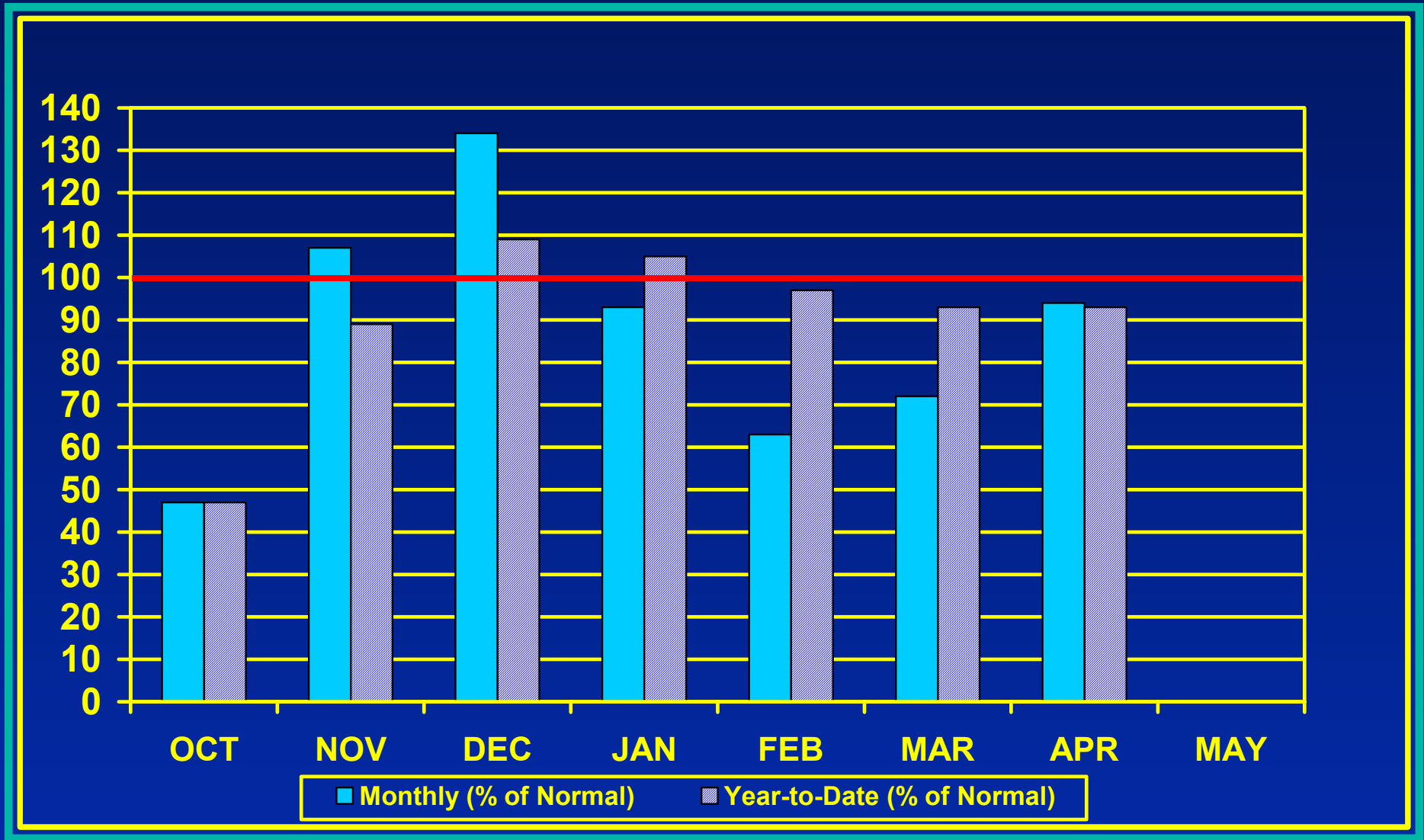
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Rogue Projects Inflow Forecast 2002 Trend



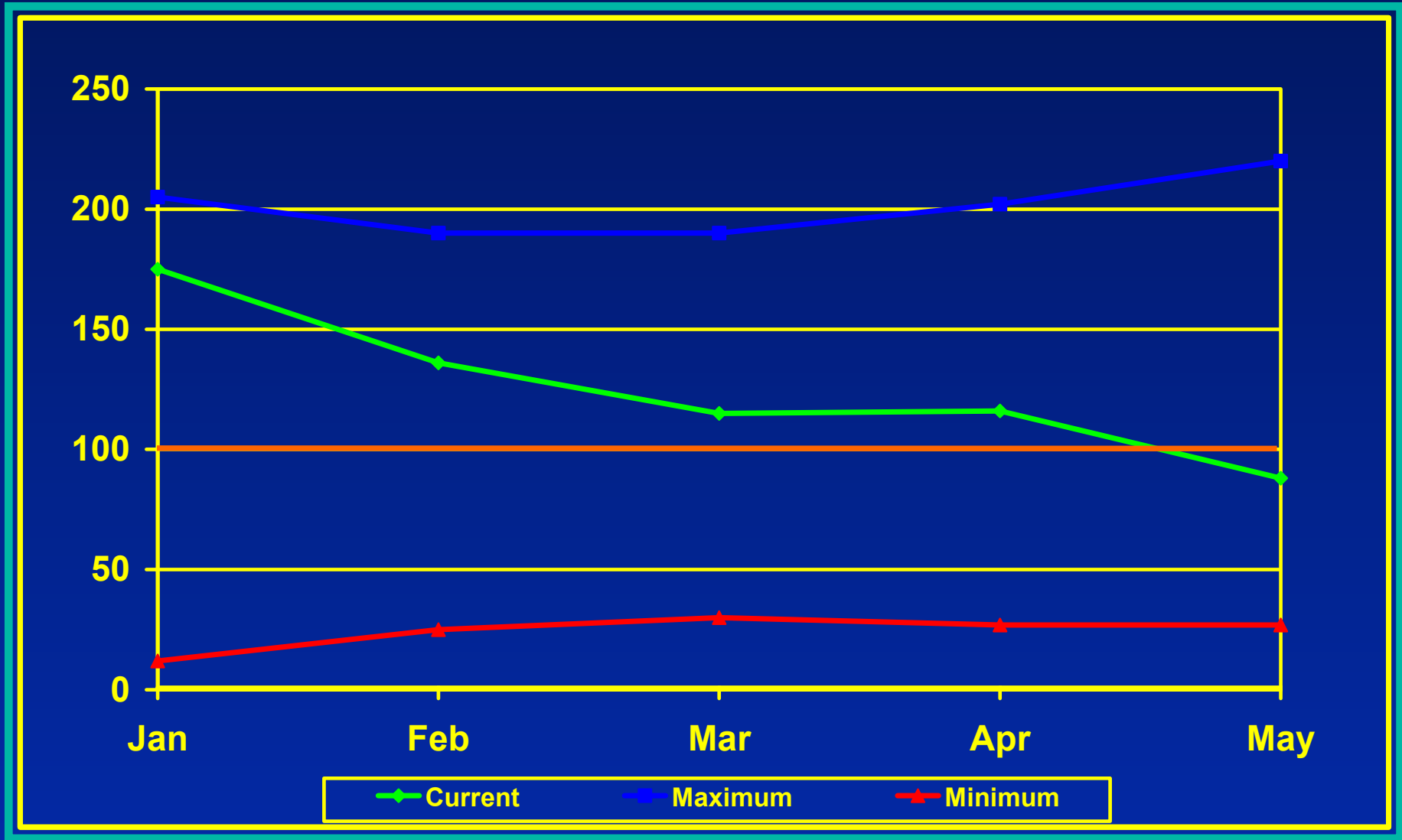
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Rogue Basin Precipitation (% of Average)



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Rogue Basin Snowpack (% of Average)



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Water Supply Outlook

USDA Natural Resources Conservation Service

Lost Creek Lake

May-Sep 2002

395,000 acre-feet*

78% of Avg

****estimate of the most probable runoff volume in acre-feet***



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Water Supply Outlook

USDA Natural Resources Conservation Service

Applegate Lake

May-Sep 2002

46,000 acre-feet*

59% of Avg

****estimate of the most probable runoff volume in acre-feet***



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Lost Creek Flow Recommendations from the State of Oregon

DATE	FLOW REQUESTED	DATE	FLOW REQUESTED
May 1 -10	< 65 deg F or 3,700 cfs at Agness	Aug 1 - 10	1,500 cfs
May 11 - 20	< 65 deg F or 3,700 cfs at Agness	Aug 11 - 20	1,900 cfs
May 21 - 31	3,700 cfs at Agness	Aug 21 - 30	1,900 cfs
June 1 - 10	3,700 cfs at Agness	Sept 1 - 10	1,900 cfs
June 11 - 20	3,700 cfs at Agness	Sept 11 - 20	1,400 cfs
June 21 - 30	3,700 cfs at Agness	Sept 21 - 30	900 cfs
July 1 - 10	1,800 cfs	Oct 1 - 10	900 cfs
July 11 - 20	1,500 cfs	Oct 11 - 20	900 cfs
July 21 - 31	1,500 cfs	Oct 21 - 31	900 cfs



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Applegate Flow Recommendations from the State of Oregon

DATE	FLOW REQUESTED
May 1 - 31	400 cfs
June 1 - 15	400 cfs
June 16 - 30	160 cfs
July 1 - 31	160 cfs
Aug 1 - 30	160 cfs
Sept 1 - 30	160 cfs
Oct 1 - 15	360 cfs
Oct 16 - 30	300 cfs
Nov 1 - 30	300 cfs



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Forecast Analysis

- *Uses a Hydrologic Model (HEC-5) of the Rogue Projects & the May NRCS/NWS Water Supply Forecast*
- *Simulate the Operation of the Two Rogue Projects for the Period of Record (72 Years)*
- *Operational Criteria Previously Discussed*
- *Graphs with “50% Probability Bands”*



LOST CREEK LAKE

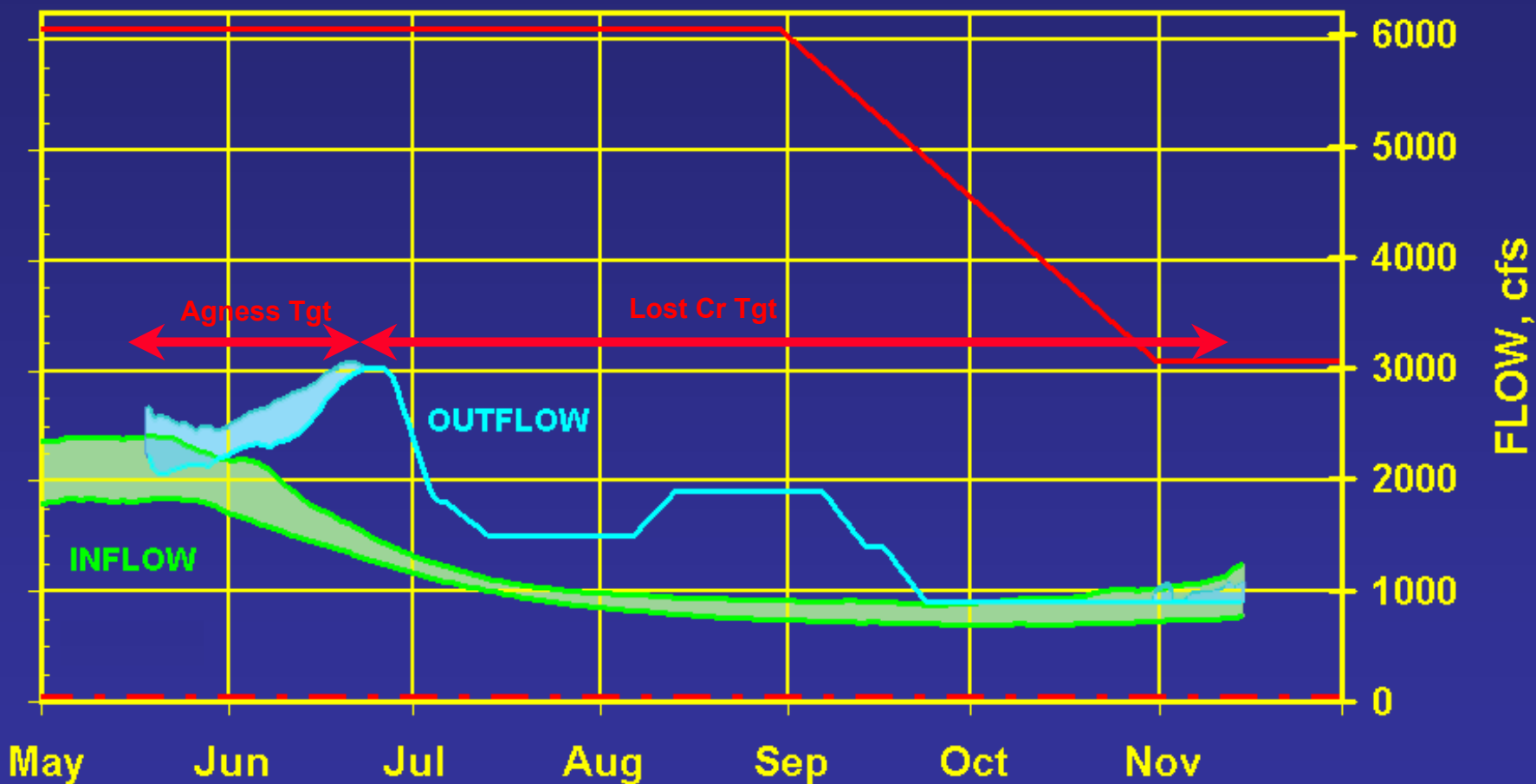
Proposed 2002 Water Management Plan

- ***Forecast Inflows***
- ***Proposed Outflows***
- ***Forecast Lake Elevations***
- ***Downstream River Flows***
- ***Comparison to Last Year***



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LOST CREEK Lake Outflow 2002 Proposed Water Management Plan



AS OF: 5/22/02

POR 1929-2000



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— Rule Curve

- - - Min Flood Pool

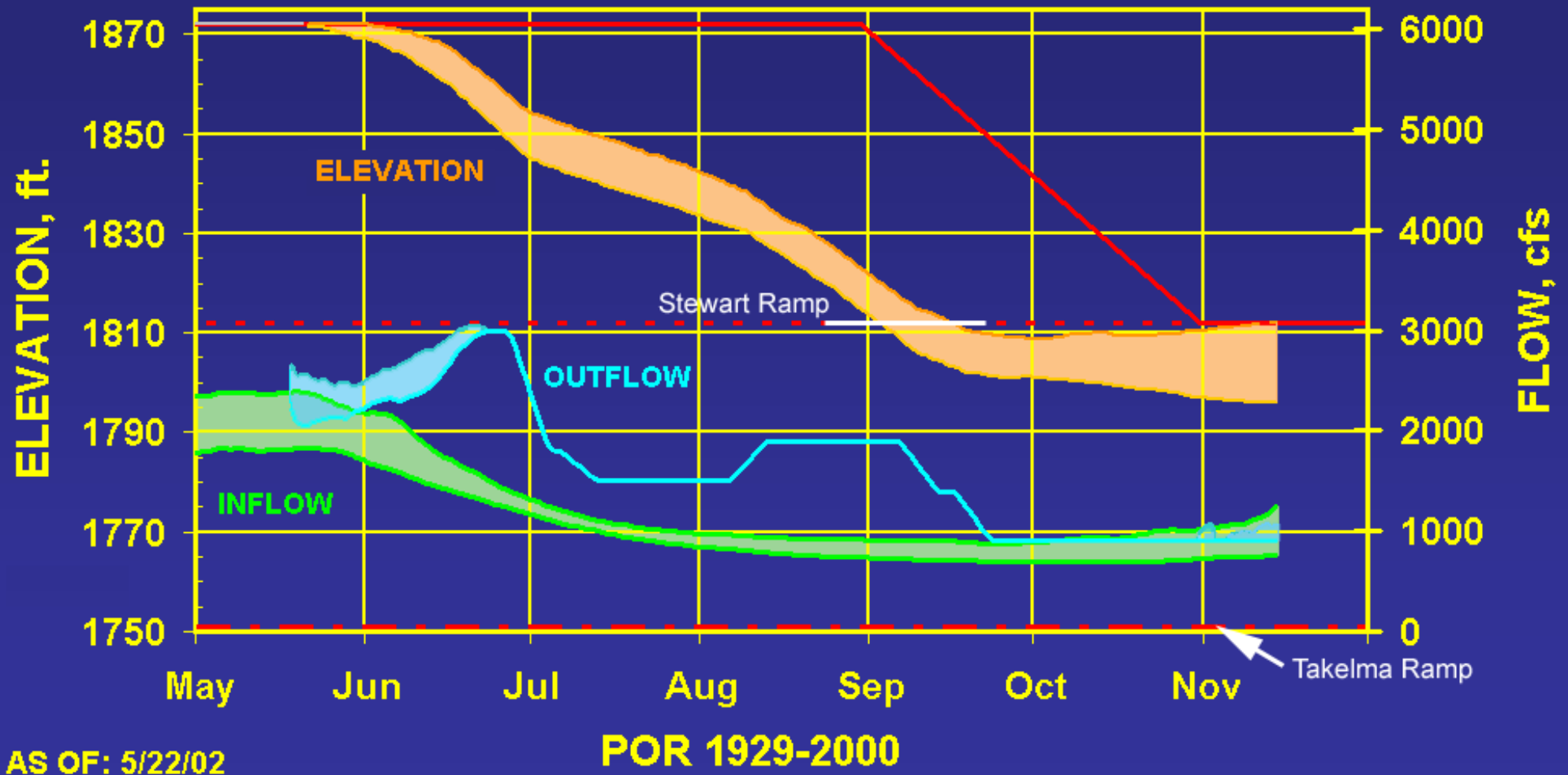
— Elevation Range

— Inflow Range

- - - Min Cons Pool

— Outflow Range

LOST CREEK Lake Elevation 2002 Proposed Water Management Plan



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Rule Curve

Elevation Range

Min Cons Pool

Min Flood Pool

Inflow Range

Outflow Range

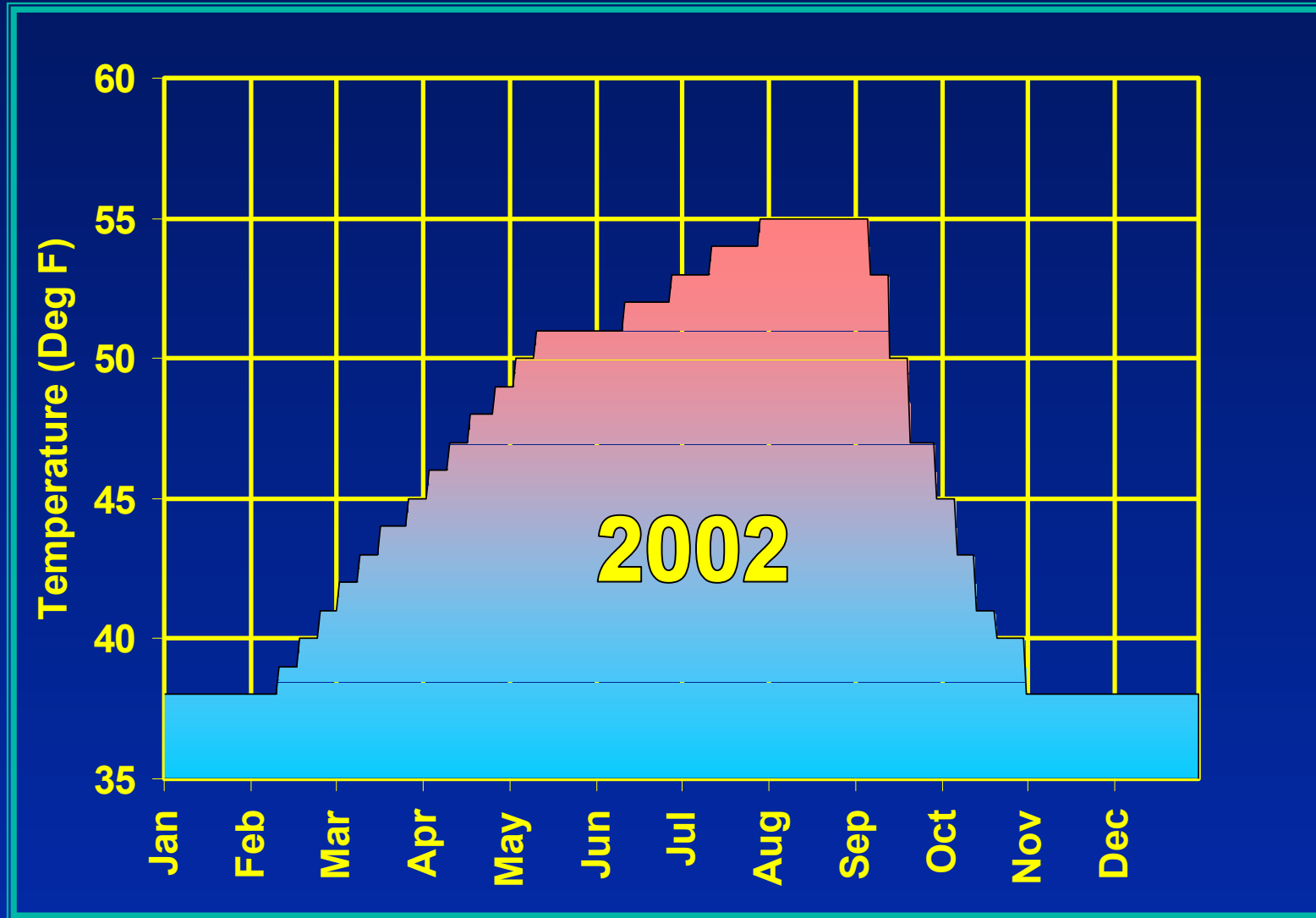
Lost Creek Lake

Holiday Pool Elevations

<u>Year</u>	<u>Mem. Day</u>	<u>July 4th</u>	<u>Labor Day</u>
1998	1871.9	1861.2	1815.4
1999	1866.9	1862.2	1813.5
2000	1872.1	1850.7	1823.4
2001	<u>1841.0</u>	<u>1826.2</u>	<u>1792.8</u>
Average	1863.0	1850.1	1811.3
<hr/>			
<i>50% Prob. Range</i>			
2002	1870.7 – 1872.0	1844.1 – 1853.5	1813.3 – 1821.5

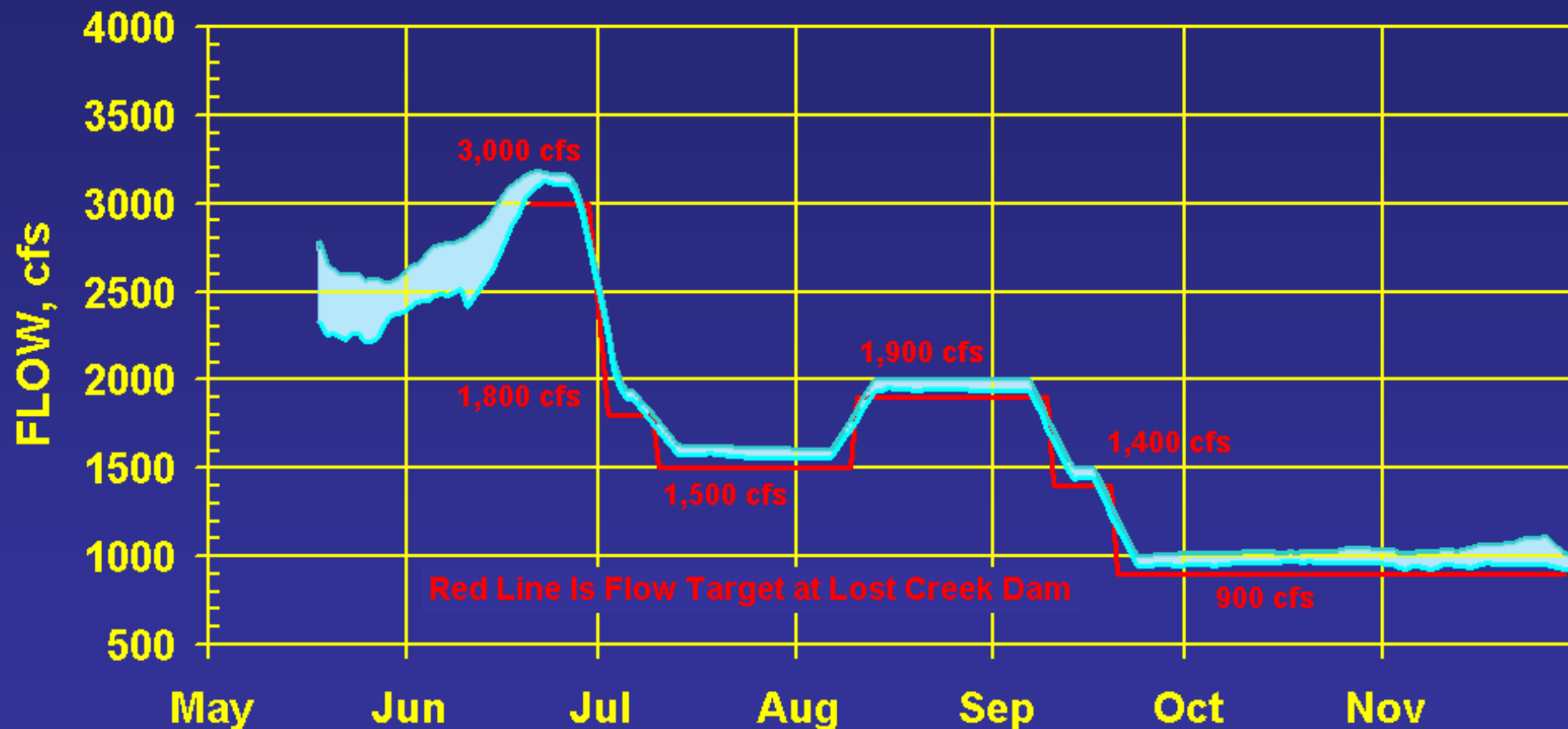


Lost Creek Temperature Release Schedule



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ROGUE RIVER at MCLEOD FLOW 2002 Proposed Water Management Plan



AS OF: 5/22/02

POR 1929-2000

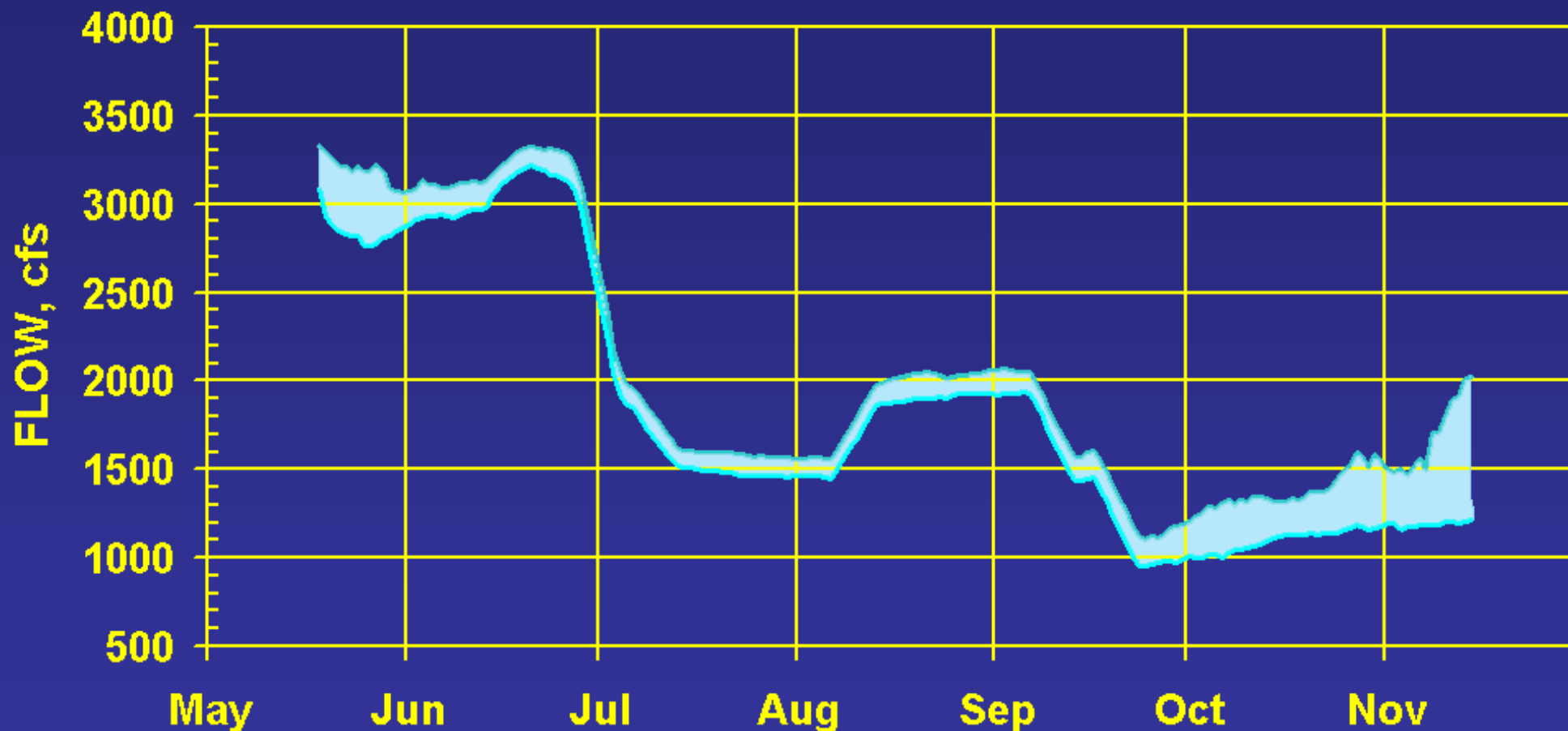


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— Without Dams Flow Range

— Flow Range

ROGUE RIVER at GRANTS PASS FLOW 2002 Proposed Water Management Plan



AS OF: 5/22/02

POR 1929-2000

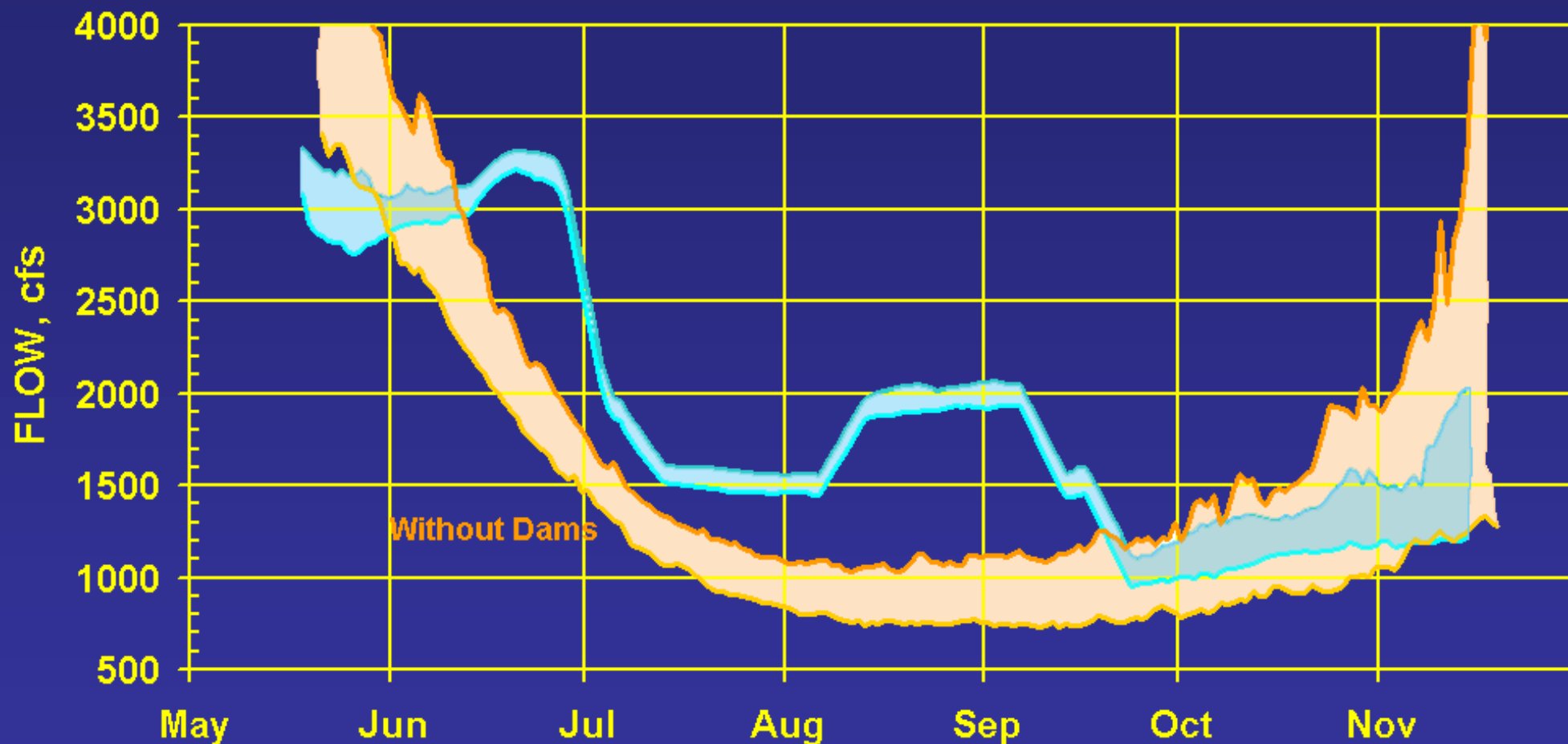


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— Without Dams Flow Range

— Flow Range

ROGUE RIVER at GRANTS PASS FLOW 2002 Proposed Water Management Plan



AS OF: 5/22/02

POR 1929-2000



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Without Dams Flow Range

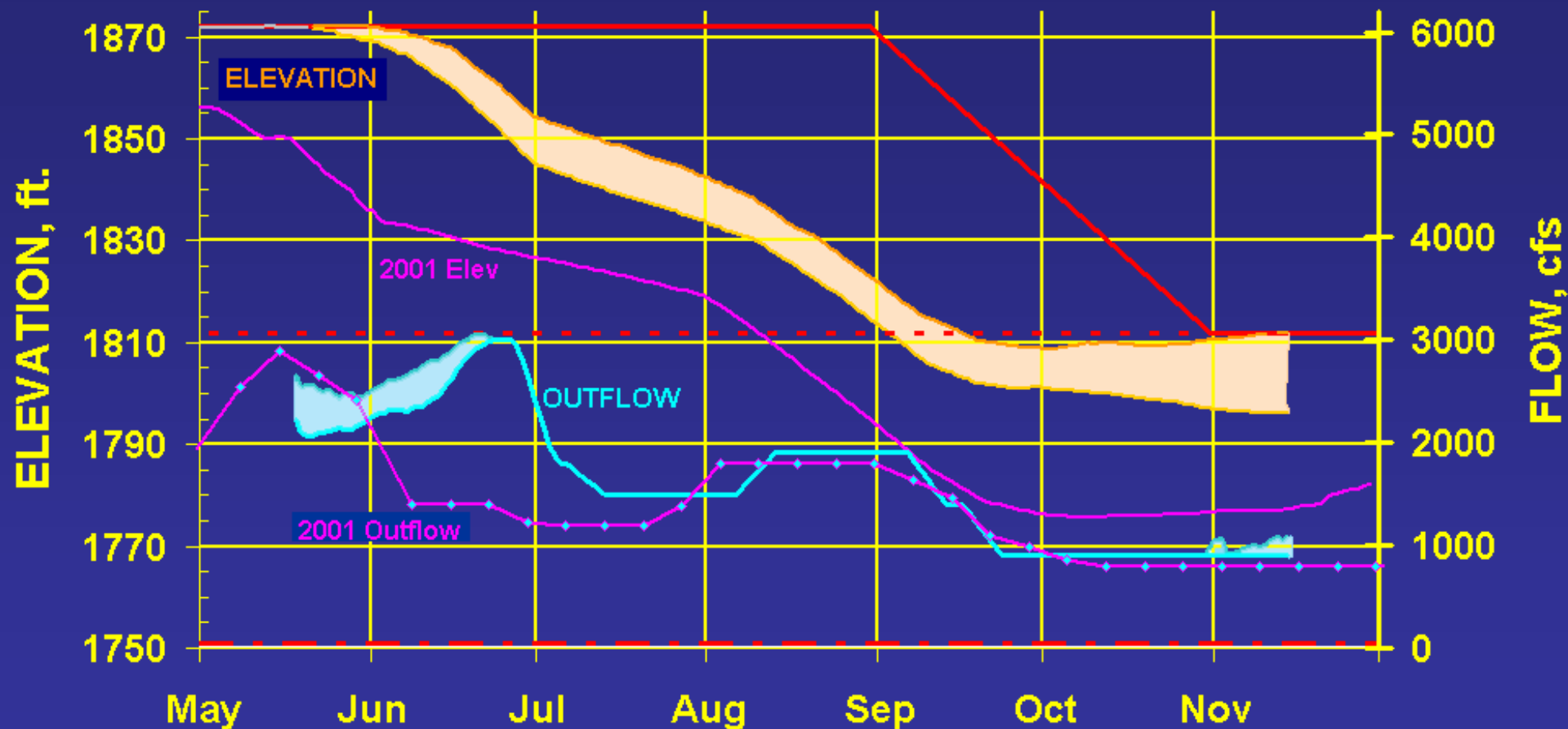
Flow Range

2002 Proposed Plan Compared to Last Year's Operations



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LOST CREEK Lake Elevation & Boat Ramps 2002 Proposed Water Management Plan



AS OF: 5/22/02

POR 1929-2000



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— Rule Curve

- - - Min Flood Pool

— Elevation Range

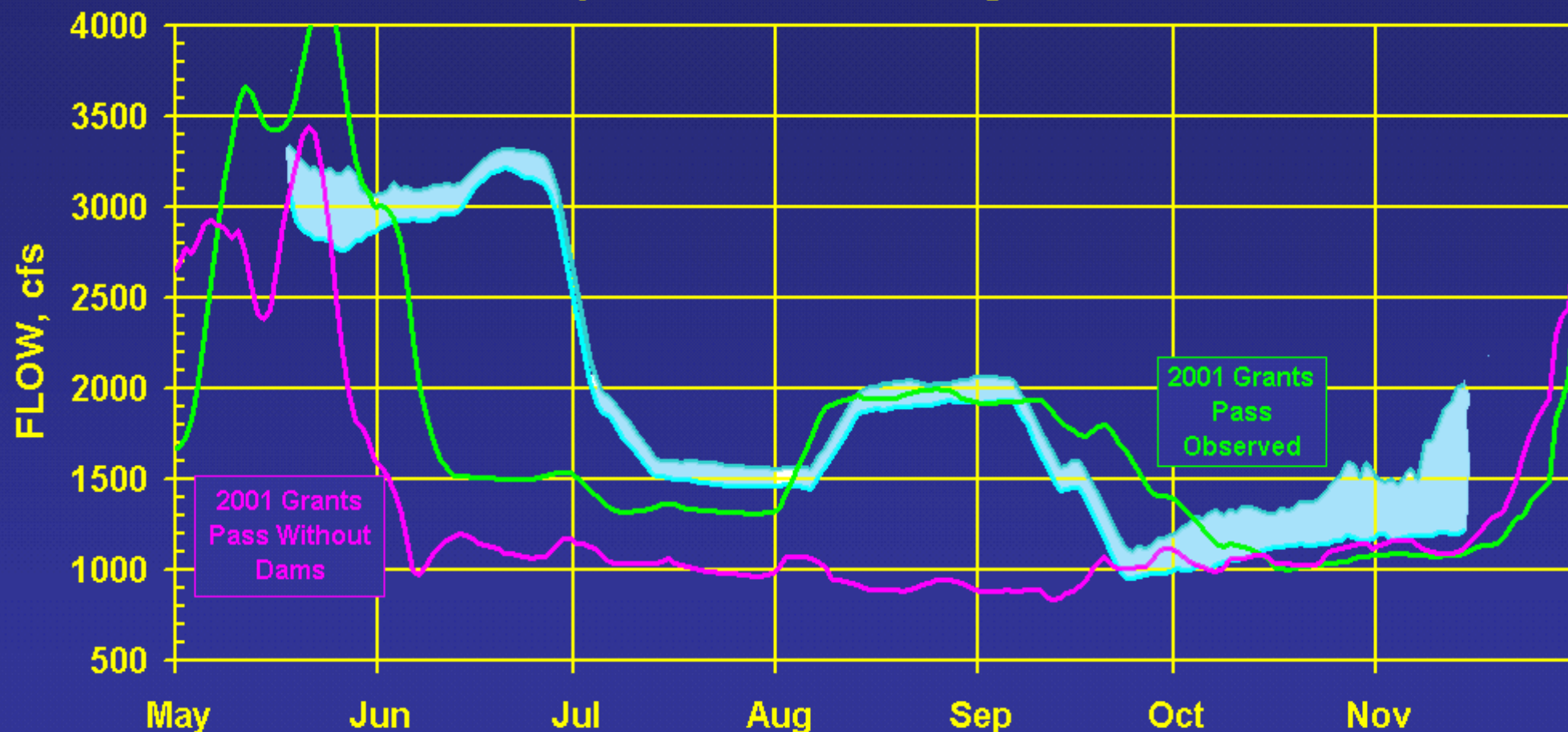
— Inflow Range

- - - Min Cons Pool

— Outflow Range

ROGUE RIVER at GRANTS PASS FLOW

2002 Proposed Water Management Plan



AS OF: 5/22/02

POR 1929-2000



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— Without Dams Flow Range

— Flow Range

APPLEGATE LAKE

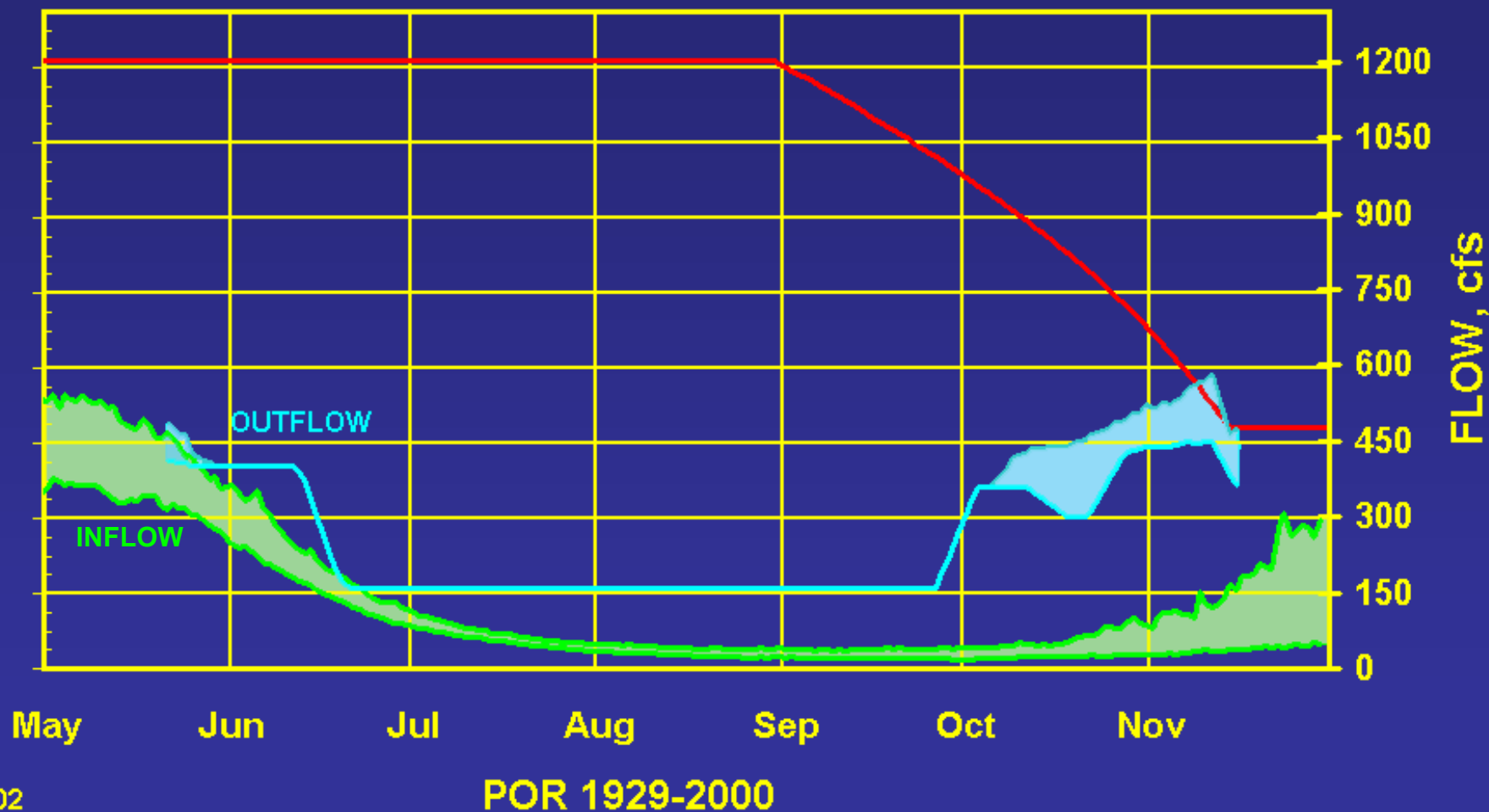
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APPLEGATE Lake Outflow 2002 Proposed Water Management Plan



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— Rule Curve

— Elevation Range

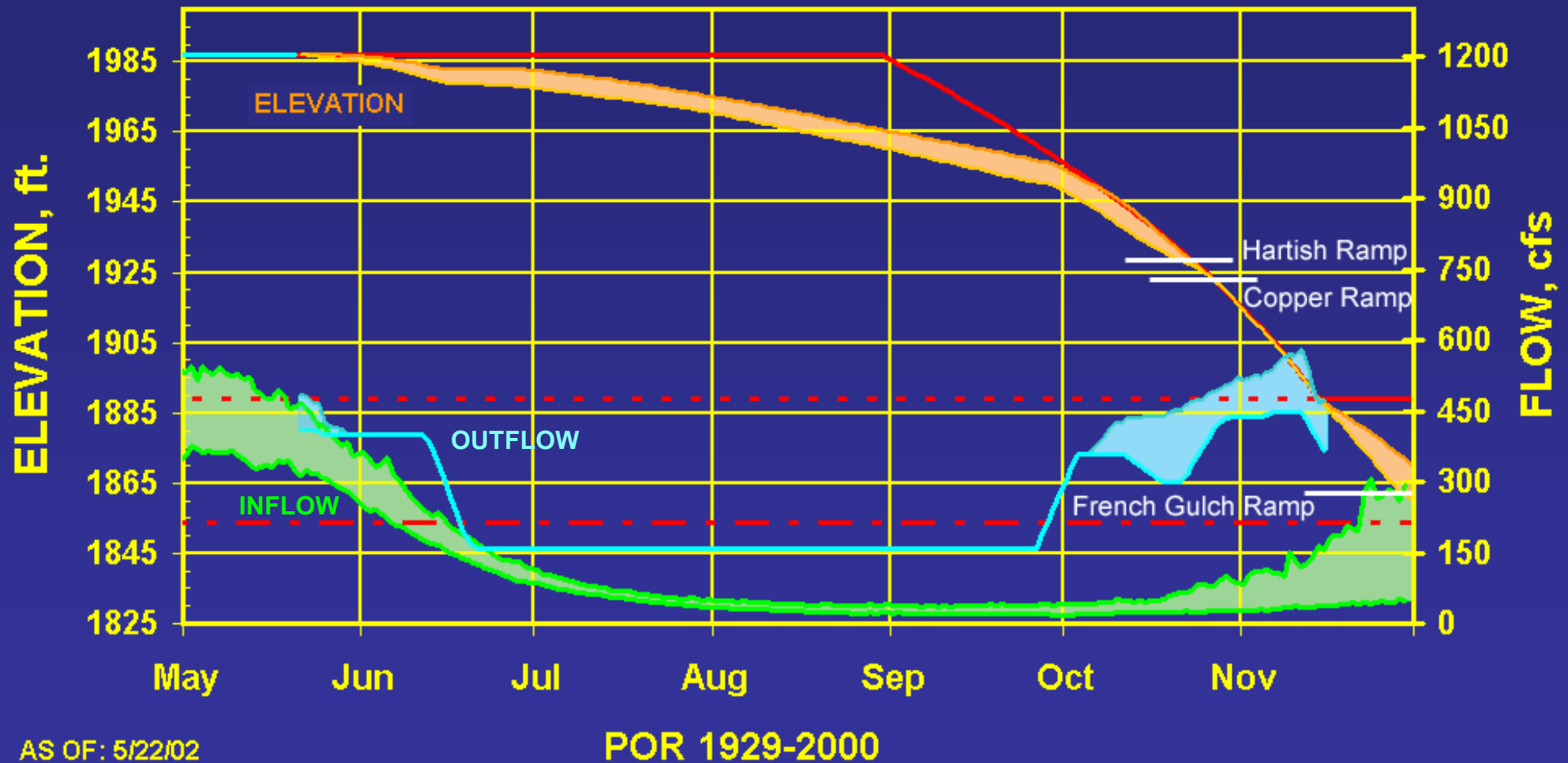
— Min Cons Pool

- - - Min Flood Pool

— Inflow Range

— Outflow Range

APPLEGATE Lake Elevation 2002 Proposed Water Management Plan



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Rule Curve

Elevation Range

Min Cons Pool

Min Flood Pool

Inflow Range

Outflow Range

Applegate Lake

Holiday Pool Elevations

<u>Year</u>	<u>Mem. Day</u>	<u>July 4th</u>	<u>Labor Day</u>
1998	1987.1	1984.4	1949.9
1999	1982.6	1985.1	1941.9
2000	1985.0	1978.6	1948.7
2001	<u>1904.3</u>	<u>1903.6</u>	<u>1894.1</u>
<i>Average</i>	1964.8	1962.9	1933.7

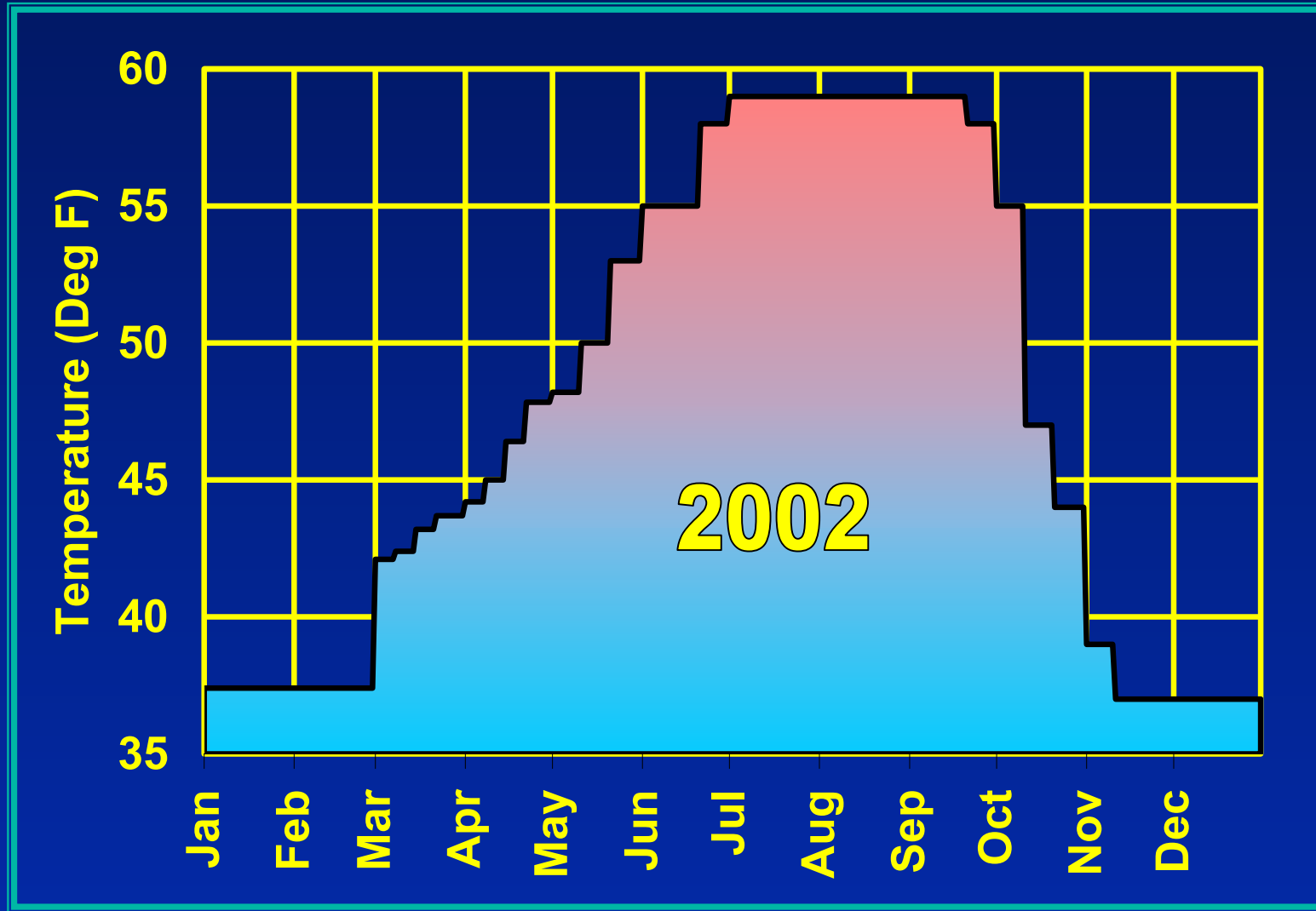
50% Prob. Range

2002 1986.1 – 1987.0 1976.9 – 1982.0 1959.9 – 1964.9



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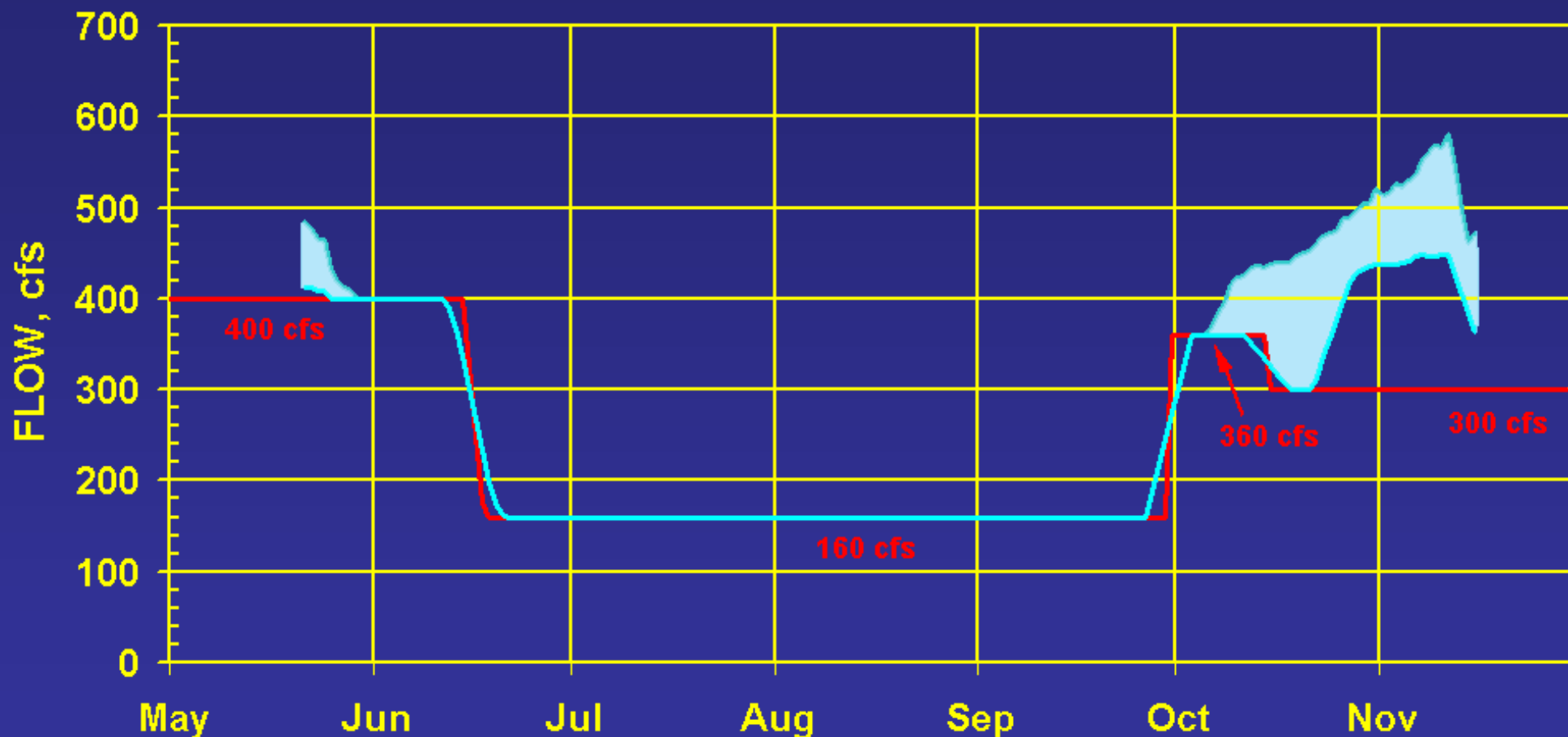
Applegate Temperature Release Schedule



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APPLEGATE RIVER at COPPER FLOW

2002 Proposed Water Management Plan



AS OF: 5/22/02

POR 1929-2000



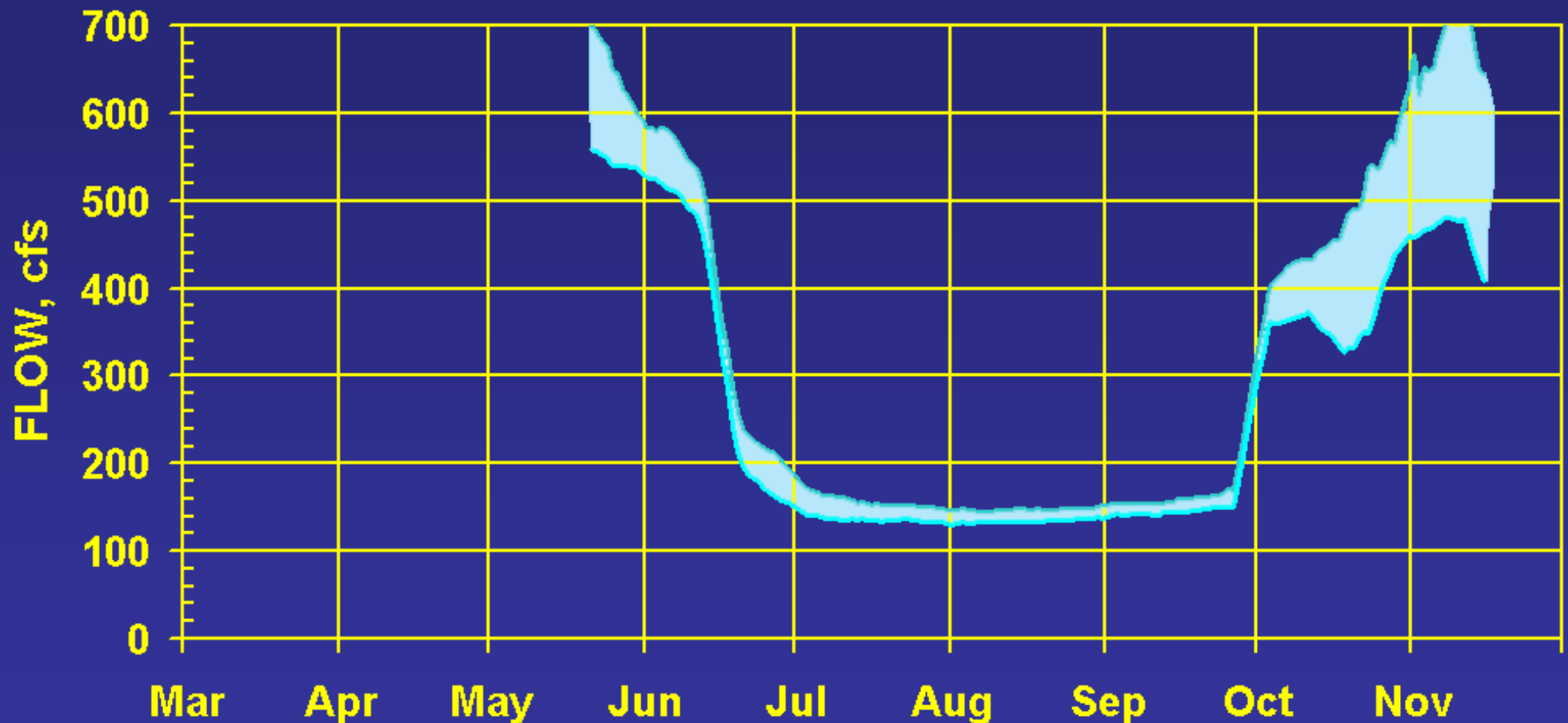
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— Without Dams Flow Range

— Flow Range

APPLEGATE RIVER at WILDERVILLE FLOW

2002 Proposed Water Management Plan



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POR 1929-2000



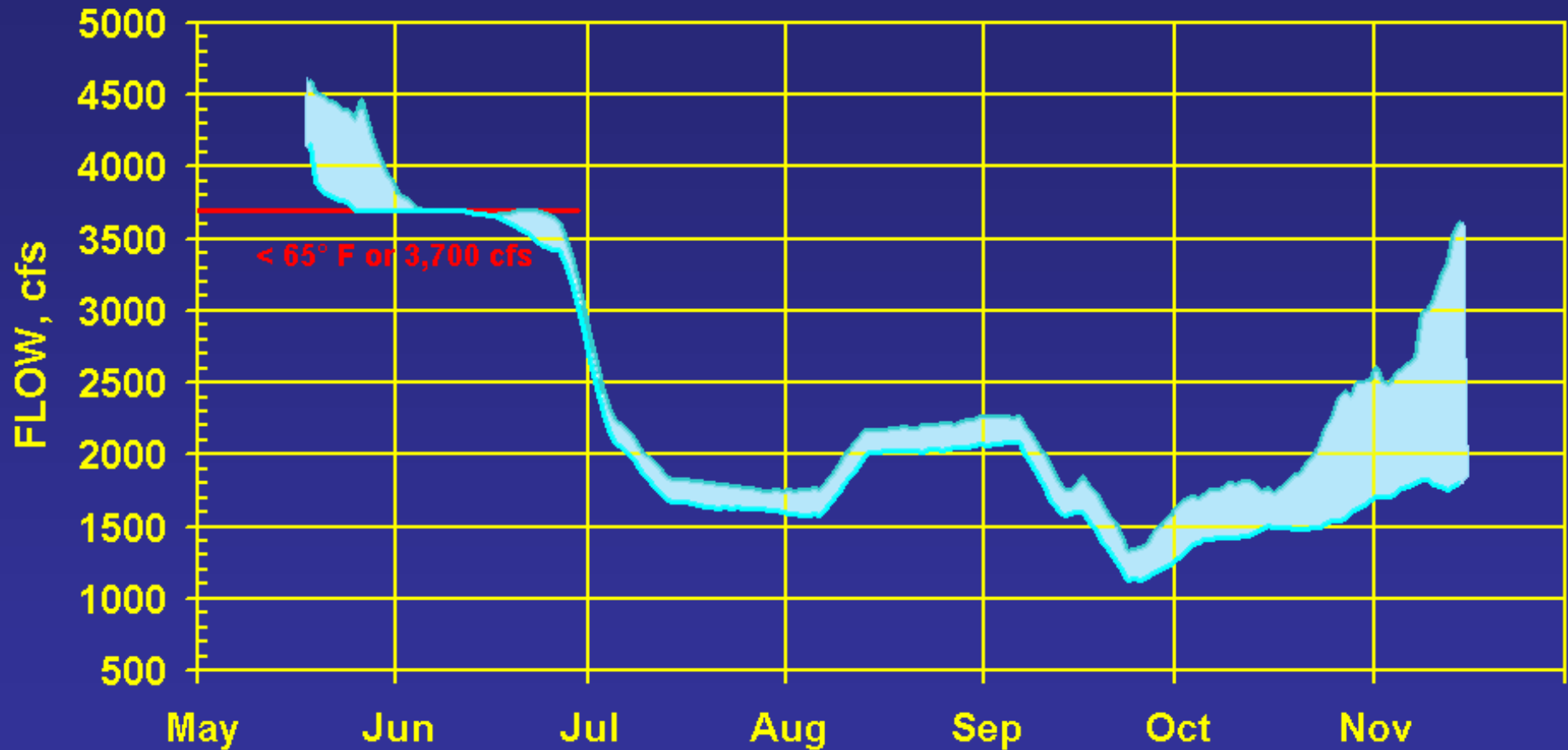
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Without Dams Flow Range

Flow Range

ROGUE RIVER at AGNESS FLOW

2002 Proposed Water Management Plan



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POR 1929-2000



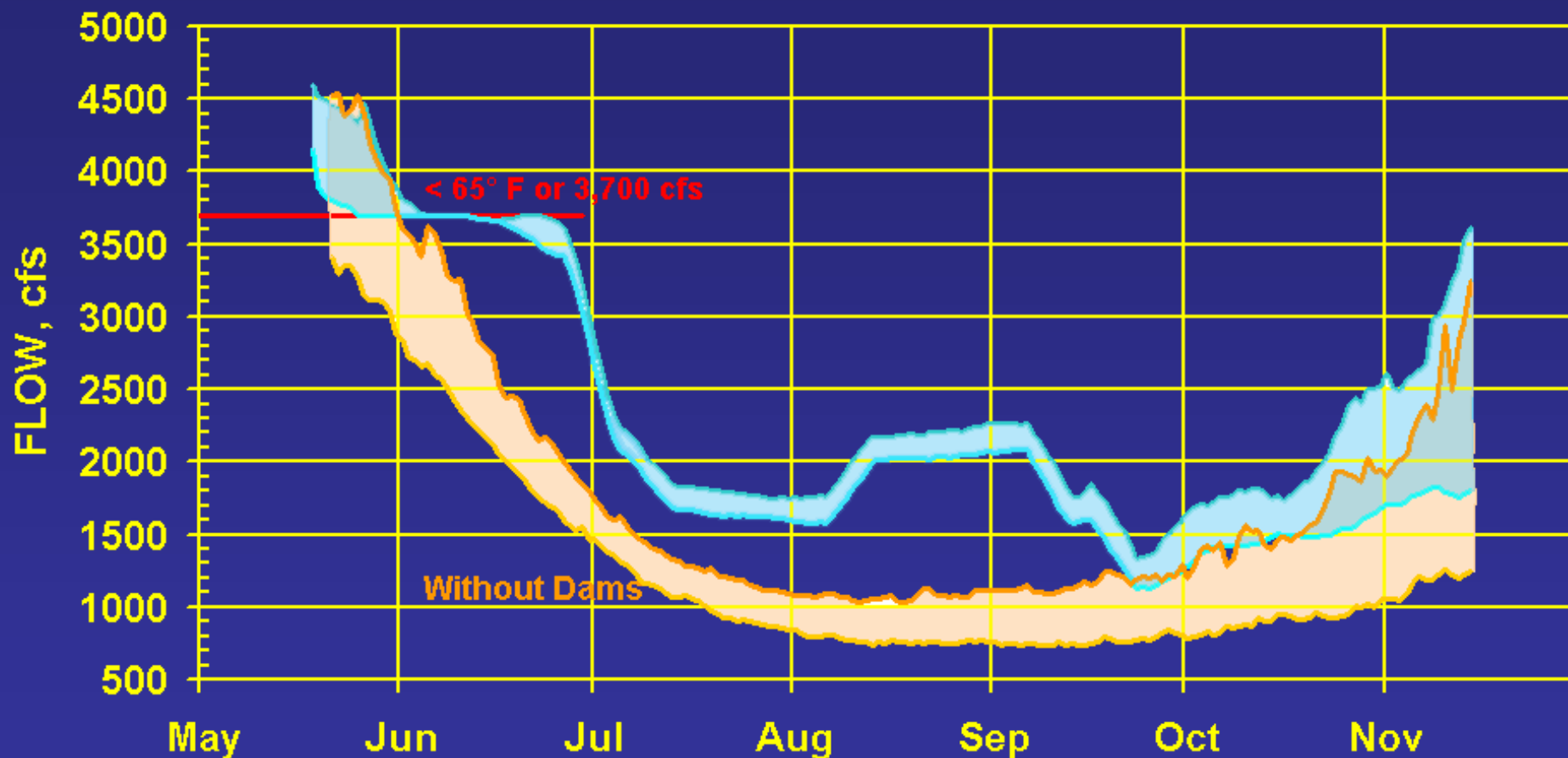
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— Without Dams Flow Range

— Flow Range

ROGUE RIVER at AGNESS FLOW

2002 Proposed Water Management Plan



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POR 1929-2000



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— Without Dams Flow Range

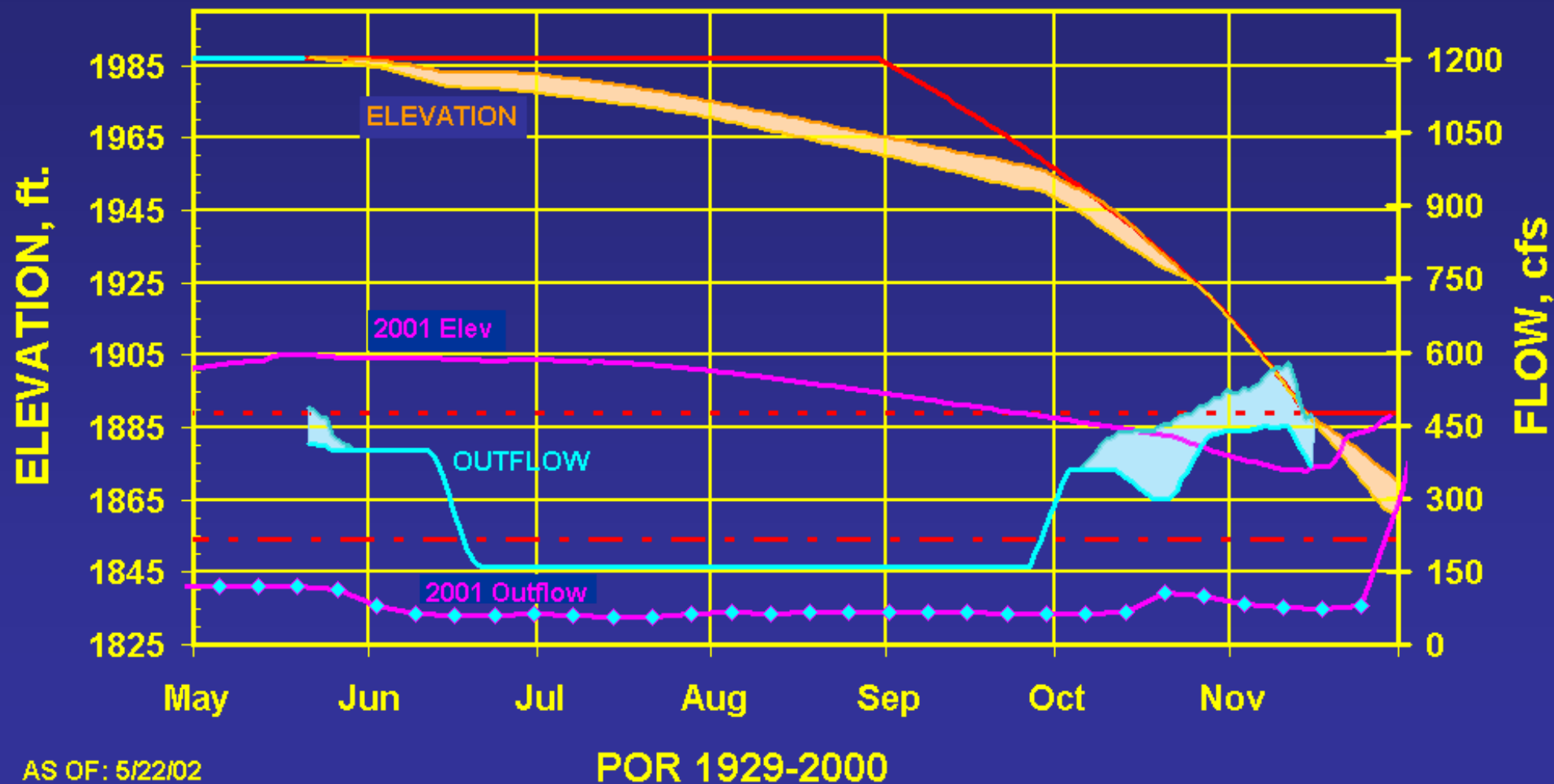
— Flow Range

2002 Proposed Plan Compared to Last Year's Operations



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APPLEGATE Lake Elevation & Boat Ramps 2002 Proposed Water Management Plan



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— Rule Curve

- - - Min Flood Pool

— Elevation Range

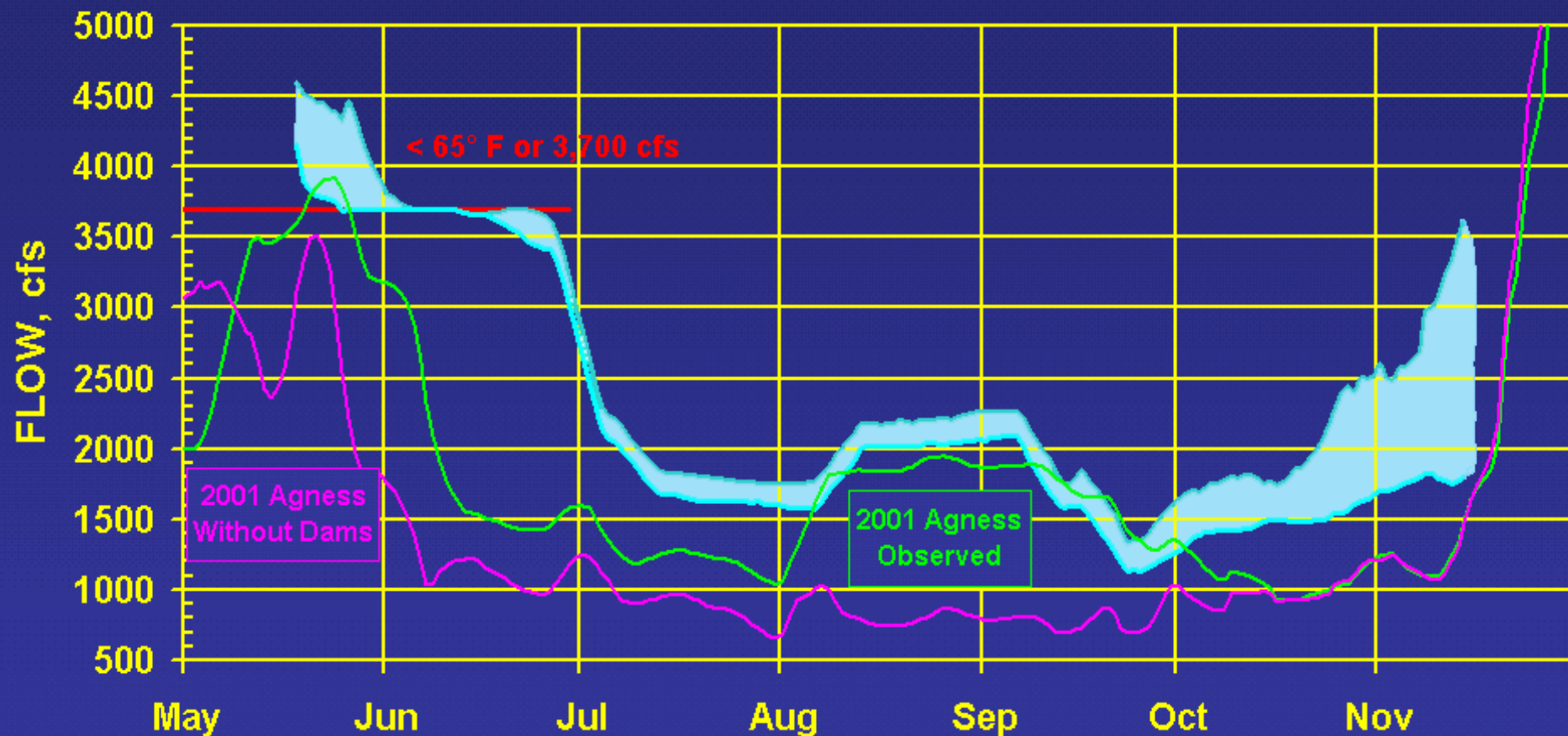
— Inflow Range

- - - Min Cons Pool

— Outflow Range

ROGUE RIVER at AGNESS FLOW

2002 Proposed Water Management Plan



POR 1929-2000

AS OF: 5/22/02



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— Without Dams Flow Range

— Flow Range

Questions and Comments??

Presentation is available at two Websites:

➤ *Portland District Homepage*

<http://www.nwp.usace.army.mil/>

➤ *Portland District Water Management Site*

<http://www.nwd-wc.usace.army.mil/nwp/>

➤ *US Geological Service Homepage*

<http://oregon.usgs.gov>



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